

Claims

1. A temperature-sensitive safety valve assembly comprising a first region for a first pressurised fluid, the region having a first outlet, a second region for a second pressurised fluid, the second region comprising a heat-sensitive sealing means, a valve between the first and second regions adapted to be actuated by the pressure of a first pressurised fluid in the first region against biasing means to open the outlet, the heat-sensitive sealing means in the second region fails at high temperature so as to de-pressurise the second region, thereby actuating the valve to move under the biasing means to close the first outlet and seal the first region, wherein the temperature-sensitive safety valve assembly comprises a relay unit, which is arranged to sense a parameter, and react to the sensing of the parameter by actuating the valve to seal the first region.
2. A temperature-sensitive safety valve assembly according to Claim 1, wherein the input is a sensed CO₂ value, a sensed gas value, a sensed earth tremor, another potentially dangerous situation, or a sensed weather reading.
3. A temperature-sensitive safety valve assembly according to any preceding claim, wherein the assembly has a audible or visual alert means, e.g. to alert employees in a building of the sensed state.
4. A temperature-sensitive safety valve assembly according to any preceding claim, wherein the temperature-sensitive safety valve assembly is also remotely, wirelessly, electronically operable.
5. A temperature-sensitive safety valve assembly according to any preceding claim, wherein the temperature-sensitive safety valve assembly comprises an electronic device and a solar cell arranged to supply power to the electronic device.
6. A temperature-sensitive safety valve assembly according to any preceding claim, wherein the valve assembly comprises a valve actuator actuated by de-pressurisation of the second region, the valve actuator also being actuatable by a movable finger.
7. A temperature-sensitive safety valve assembly comprising a first region for a first pressurised fluid, the region having a first outlet, a second region for a second pressurised fluid, the second region comprising a heat-sensitive sealing means, a valve between the first and second regions adapted to be actuated by the pressure of a first pressurised fluid in the first region against biasing means to open the outlet, the heat-sensitive sealing means in the second region being arranged to fail at high temperature so as to de-pressurise the second region, thereby actuating the valve to move under the biasing means to close the first outlet and seal the first region, wherein the temperature-sensitive safety valve assembly is also remotely, wirelessly, electronically operable.

8. A temperature-sensitive safety valve assembly according to any preceding claim, wherein the temperature-sensitive safety valve assembly is actuatable by the axial movement of a rotary and axially movable shaft.

5 9. A temperature-sensitive safety valve assembly according to Claim 8, wherein the shaft cooperates with one or more stops which prevents movement of shaft.

10 10. A temperature-sensitive safety valve assembly according to Claim 9, wherein the shaft cooperates with two stops.

10 11. A temperature-sensitive safety valve assembly according to Claim 10, wherein the two stops are arranged at opposing sides of the shaft periphery (i.e. spaced by 180 degrees).

15 12. A temperature-sensitive safety valve assembly according to any of Claims 9 to 11, wherein the or each stop is motor driven.

13. A temperature-sensitive safety valve assembly according to any of Claims 9 to 12, wherein the or each stop is mounted on a rotatable member.

20 14. A temperature-sensitive safety valve assembly comprising a first region for a first pressurised fluid, the region having a first outlet, a second region for a second pressurised fluid, the second region comprising a heat-sensitive sealing means, a valve between the first and second regions adapted to be actuated by the pressure of a first pressurised fluid in the first region against biasing means to open the outlet, the heat-sensitive sealing means in the second region fails at high temperature so as to de-pressurise the second region, thereby actuating the valve to move under the biasing means to close the first outlet and seal the first region, wherein the temperature-sensitive safety valve assembly comprises an electronic device and a solar cell arranged to supply power to the electronic device.

25 15. A temperature-sensitive safety valve assembly according to any preceding claim, wherein the valve assembly is arranged in, or adjacent, a multi-room building such as a multi-storey building.

30 16. A temperature-sensitive safety valve assembly according to any preceding claim, wherein the temperature-sensitive safety valve assembly comprises an electric panel board which senses the problem, alerts employees etc. and resets after the problem has been sensed (and solved).

35 17. A temperature-sensitive safety valve assembly according to any preceding claim, wherein the heat-sensitive sealing means comprises a glass bulb.

40 18. A temperature-sensitive safety valve assembly according to Claim 17, wherein the glass bulb is liquid filled so at high temperature the liquid causes explosion of the bulb.

45 19. A temperature-sensitive safety valve assembly according to Claim 17 or 18, wherein the glass bulb is brittle so upon failure it does not melt and maintain a seal.

20. A temperature-sensitive safety valve assembly according to Claim 17, 18, or 19, wherein liquid such as water is arranged upstream of the glass bulb so that when the glass bulb fails liquid is released.

5 21. A temperature-sensitive safety valve actuator assembly, comprising a region for a pressurised fluid such as air and heat sensitive sealing means on the region, to close the region, and a valve actuator, the temperature-sensitive safety valve actuator assembly being designed to be fitted to a valve assembly for a fluid supply line, and the heat 10 sensitive sealing means being de-sealable at high temperature to de-pressurise the region, to move the valve actuator so as to open the region to actuate a valve assembly, the valve actuator also being actuatable by a movable finger.

15 22. A temperature-sensitive safety valve actuator assembly according to any preceding claim, wherein the finger is electronically operated.

20 23. A temperature-sensitive safety valve actuator assembly according to any preceding claim, wherein one or more further temperature-sensitive safety valve assemblies are provided, the or each further temperature-sensitive safety valve assemblies being similar to the temperature-sensitive safety valve assembly, and at least one of the or each further temperature-sensitive safety valve assembly is in communication with the temperature-sensitive safety valve assembly so that de-sealing of the heat sensitive sealing means on the second region of the or each further temperature-sensitive safety valve assembly is communicated to the temperature-sensitive safety valve assembly to 25 shut the outlet of the temperature-sensitive safety valve assembly.

24. A building having a temperature-sensitive safety valve assembly or temperature-sensitive safety valve actuator assembly in accordance with any one or more of Claims 1 to 23 fitted thereto.